23. *Enhalesidota pura* Neumœgen.
24. *Halesidota ambigua* Strecker.
25. *Halesidota mixta* Neumœgen.
26. *Halesidota significans* H. Edwards.
27. *Phryganidia californica* Packard.
28. *Alypia maccullochii* Kirby.

ON THE SPECIFIC VALIDITY OF THANAOS AUSONIUS LINTNER.

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PLATE III.

During the last four years I have been searching for *Thanaos ausonius* (Lintn.) on the pine barrens west of Albany, N. Y. The individual which Lintner described under that name was taken in this locality, and it seemed reasonable to expect it here if anywhere. Over five hundred butterflies belonging to this genus were taken, of which two hundred and eleven were *T. martialis*. No "*ausonius*" appeared to reward my efforts.

At Dr. Dyar's suggestion I made a comparative study of *martialis* and *icelus* with a view to determining, if possible, whether or not *ausonius* is entitled to specific distinction. This inquiry has been diligently prosecuted, and the results are here given.

A glance at the genitalia of *ausonius** was sufficient to prove it distinct from *icelus* and to show that if not a good species it must be regarded as a sport of *martialis*. From this species it was separated by Lintner on the grounds of its small size, and the absence of the fenestrate spots on the primaries; the other characters "distinguishing" it being of comparatively little importance.

Considering the genitalia of the greatest morphological value I first compared the tip of the right clasp of "*ausonius*" with the figure thereof given in Scudder's "Butterflies of the Eastern United States and Canada." This figure I found to be measurably accurate though somewhat diagrammatic. I next compared the tip of the left clasp of "*ausonius*" with Scudder's figure of the left clasp of *martialis*, and

* The type in the Lintner memorial collection was studied in detail by the writer.

found them somewhat different. I then made a comparative study of the clasps of twenty-five *martialis*, and found the following to be true: there is considerable variation in the detail of both clasps, the general character however remaining the same; the right clasp varies to a greater degree than the left; there is a greater difference between the corresponding clasps of individuals recognized under the common name of *martialis* than between that of "*ausonius*" and the usual *martialis*. Plate III, fig. 1, represents the tip of the right clasp of *martialis* as found in sixteen of the twenty-five examined. The view is taken from the side, a little above, and a little behind. Fig. 2 shows the same organ of *ausonius* from the same position. (These drawings magnified 14½ times.)

It will be seen that (to quote from Scudder) "The blade of the right clasp (of '*ausonius*') differs (from that of *martialis*) in its greater slenderness, and prolongation; the denticle of the upper edge is larger, and more prickly so that the blade seems to narrow more abruptly beyond it, while the bent apex is more distinctly conical." "And pointed" is added, but I fail to agree with this. Fig. 3 shows the usual sharpness of the apex in *martialis* and that of the specimen under discussion is hardly different. But are these slight differences of specific value? By no means. Compare figs. 4 and 6, which are drawn from undoubted *martialis*, with fig. 5, which is *ausonius*. (The view here is from a little further above than in figs 1 and 2.) Fig. 4 is the usual form, fig. 6 an extreme modification. Between these there may be found several intermediate forms. (These figures enlarged 22 times.)

The left clasp of *ausonius* does not differ from the usual left clasp of *martialis* as represented in figs. 7, 8 and 9.

Fig. 7 shows the tip of left clasp seen directly from the side (as the genitalia are mounted, enlarged 18 times).

Fig. 8 is the same seen from in front at an angle of about 45° (18 diameters).

Fig. 9 is the same from directly above (as the genitalia are mounted; 25 diameters).

I have been unable to find a specimen with which I can reconcile Scudder's representation of the apex of the left clasp and, if his figure is accurate, it must be looked upon as a departure from the usual pattern.

Figs. 11 and 12 show the apical half of right and left clasps respectively (after Scudder).

Fig. 10 represents the genitalia of *martialis* as seen from below (25 diameters) showing the angle at which the clasps in each instance were mounted for examination.

It will thus be seen that the modifications observed in the clasps of the individual named *Thanaos ausonius* are well within the limits of the variation exhibited by the species *T. martialis*.

I next removed with a bristle a few androconia from the costal fold of the left wing of "*ausonius*," and found them identical with the androconia of *martialis*.

The only other difference worthy of note is the absence of the hyaline spots. Of *martialis*, ninety-one females were examined and one hundred and twenty males. The number of such areas on a wing was found to vary from seven to three. The location of the several spots is shown in fig. 13 and for easy reference I have lettered them. No single specimen had more than seven of the possible eight, the one ♀ showing α, lacking θ within the cell. The most persistent of these spots are ε, ζ and η, all of which appear in each of the specimens examined. The ♀♀, as the more conservative element of the species, constantly show a tendency to retain all; the ♂♂ as the more variable element tend to lose them. As *ausonius* is a ♂ I shall here give only the results of my examination of the males.

α	was	missing	in	120,
β	"	"	"	111,
θ	"	"	"	109,
γ	"	"	"	19,
δ	"	"	"	6,
ε, ζ, η	were	"	"	0.

In three specimens ε, ζ and η, the only ones which persist, are greatly reduced and of rounded outline, and it does not seem to me that the loss of these is sufficient warrant for the specific distinction of a butterfly no second specimen of which has ever been taken.

These hyaline areas are little patches of the membrane which have been partially denuded of scales, the atrophied insertion of each one of which is plainly visible with a $\frac{1}{6}$ objective. But the denudation is only partial, many of the scales persisting, although for the most part wanting in pigment. Yet not always unpigmented, for occasionally a single one or a group is to be found furnished with the rich dark brown color of the submarginal spots in which the hyaline areas are set.

There can be no doubt but that *ausonius* is merely a color sport of *martialis*. The wings having been suffused and the fenestrate spots reclaimed by the scales under conditions which undoubtedly can be supplied in the laboratory but are not likely to occur very often in nature.

NOTES ON THE GENUS CARIPETA WITH DESCRIPTION OF A NEW SPECIES.

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In studying the genus *Caripeta*, I came across a strange error in the description and figuring of *Caripeta angustiorata* Walker, in Packard's Monograph of the Geometridæ. (Vol. X, U. S. Geol. Survey of the Territories, p. 238.) Entomologists in general have regarded, I believe, the insect figured by Packard in this monograph (Plate IX, fig. 52), as the true *C. angustiorata*, which I will prove is incorrect. While reading over the description I noticed it did not correspond exactly with the plate and this set me thinking, and I resolved to go over Packard's specimens in the Cambridge Museum of Comparative Zoölogy. To my surprise I found a very different insect from his figure, larger and with yellow streaks on the veins of the forewings, labelled "Smith, Norway, Me." (two specimens). Then I went over the collection carefully but could find no moth like the figure and I thought perhaps the labels had been changed, but I disproved this theory by finding a similar specimen (Packard mentions this in Monograph) in the Minot collection of the Boston Society of Natural History, through the kindness of Mr. C. Johnson. Working on these lines I found Strecker's description (Lep. Rhop. Het. Suppl. 2, 9, 1899), of *Caripeta seductaria* to correspond with Packard's insects, likewise to Walker's description of *C. angustiorata*. Having some ten specimens of each, that is, of Packard's figure, and his specimens of *angustiorata* corresponding to *seductaria* Streck., I sent a few to Sir George Hampson of the British Museum for comparison with Walker's types. He replied that Strecker's *C. seductaria* (like specimens in Packard collection at Cambridge), were Walker's *C. angustiorata*, this making *seductaria* a synonym of *angustiorata*.